

CLAIMS

1. A composition of matter comprising compressed fibrous plant materials, wherein at least 20% of the total weight of the composition of matter is compressed
5 fibrous plant materials having a length of at least about 3 cm.
2. A composition of matter as in claim 1, wherein the compressed fibrous plant materials having a length of at least 3 cm comprise between about 20-40% of the total weight of the composition of matter.
- 10 3. A composition of matter according to claim 1, wherein the compressed fibrous plant materials having a length of at least about 3 cm comprise at least 50% of the total weight of the composition of matter.
- 15 4. A composition of matter according to claim 1, 2 or 3 having a density between about 0.4 to 0.6 g/cm³.
5. A composition of matter according to claim 1 having a density between about 0.45 to 0.55 g/cm³ and the compressed fibrous plant materials having a length of at
20 least about 3 cm comprise between about 55% to 80% of the total weight of the composition of matter.
6. A blended feed adapted for feeding to ruminant livestock comprising the composition of matter of claim 1, 2, 3, 4 or 5 and other feed materials, wherein at least
25 15% of the total weight of the blended feed is the composition of matter of claim 1, 2, 3, 4 or 5.
7. An apparatus adapted to compress fibrous plant materials to form compressed solid feed, comprising:
30 at least one die comprising a plurality of raw material receiving spaces each

having an inlet and an outlet, wherein the raw material receiving spaces have a tapered shape in which the inlet is wider than the outlet and the raw material receiving spaces are adapted to receive the fibrous plant materials,

5 a plurality of pushing rods disposed opposite to the inlets of the raw material receiving spaces, the pushing rods being adapted to compress the fibrous plant materials by reciprocating relative to the dies along the longitudinal direction of the inlets and outlets of the raw material receiving spaces.

8. An apparatus according to claim 7, wherein the plurality of raw material receiving spaces are disposed in parallel and the plurality of pushing rods are disposed opposite to the raw material receiving spaces.

9. A method for compressing fibrous plant materials to form compressed solid feed comprising:

15 preparing a raw material that contains at least about 60% by weight of fibrous plant materials having a length greater than 3 cm,

supplying the raw material into raw material receiving spaces in a die, the raw material receiving spaces having a longitudinal direction and

20 compressing the raw material along the longitudinal direction to form the compressed solid feed.

10. A method according to claim 9, further comprising:

preparing the raw materials by mixing dried plant stalks having a length of at least 3 cm with dried leaves.

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11. A method according to claim 10 or 11, wherein after the compression step at least 20% of the total weight of the compressed solid feed comprises fibrous plant materials having a length of at least 3 cm and the compressed solid feed has a density of between about 0.4. to 0.6 g/cm³.

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12. A method of producing livestock product comprising distributing the blended feed of claim 6 to the livestock using an automatic feed distributing machine.